

Materials & Tests Unit



Standard Operating Procedure Precast Concrete Annual Facility Audit

Objectives:

- The purpose of the Annual Facility Audit is to ensure that Precast Concrete facilities are operating and documenting operations which meet NCDOT standards, and are capable of producing NCDOT approved precast products.
- Audits shall be performed a minimum of once per year, unannounced, and recommended during a NCDOT production.

Materials Inspection and Acceptance:

The review of documentation and collection of samples will confirm the facility meets all NCDOT standards, and is in compliance with all Materials and Tests policies.

Safety Equipment List:

Safety Vest
Hard Hat
Steel Toe boots
Eye and ear protection
Gloves for collecting samples

Safety Concerns:

Personnel should be aware at all times of functioning equipment and machinery. Review all safety guidelines required by the facility.

Required Sampling:

Cement – one gallon (plastic bag)
Fly Ash – one gallon (plastic bag)
Reinforcing Steel – two sample bars for each diameter (30” in length)
Fine Aggregate – one bag (25 – 30 pounds)
Coarse Aggregate – one bag (25 – 30 pounds)
Water – ½ gallon (one wide mouth jar)
Samples should be submitted to Chemical and Physical Laboratories with sample cards.

M&T Inspector's Audit:

- Verify 3rd party facility certificate with expiration date is on site.
- Verify 3rd party inspection report (complete report/check list performed by 3rd party) is on-site.
- Verify 3rd party inspector has been certified (NPCA, ACPA, or PCI).
- Verify facility manager is sending all 3rd party inspection documentation to M&T (see Annual Facility Audit Field Book).
- View and verify facility is utilizing NCDOT approved mix designs.
- View and verify certification of all on-site NCDOT Concrete Field Technicians. Technician certifications must be active.
- View and verify certification of all on-site NCDOT Concrete Batch Technicians. Technician certifications must be active.
- View and verify approved materials (cement, fly ash, aggregate, admixtures) per approved mix designs.
- If facility is utilizing a Ready Mix company, verify Ready Mix company is on the NCDOT approved list and 3rd party certified.
- Verify Bill Of Lading documentation is shipped with each piece.
- Verify each piece has the correct Alternate ID clearly marked and matches the documentation shipped.
- Verify the facility is utilizing an on-site cylinder testing machine, and the machine is calibrated a minimum of once per year.
- View sample of completed NCDOT documentation. This documentation should be completed for every NCDOT piece.
- Spot check forms and formwork for; required reinforcing steel, required reinforcing steel spacing, cleanness, well oiled, correct dimensions of formwork, placement of concrete, and removal of formwork once a piece has been casted.
- Perform a walk through the yard to view/verify; dimensions of piece meet the approved requirements, proper storage of pieces, repair process, and loading of pieces.

Standards:

AASHTO M 199

ASTM C 913

NCDOT Standard Specifications For Roads And Structures

NCDOT Materials and Tests policies and procedures

Sample Prep And Submittal:

Sample containers shall be handled to avoid contamination during the sampling, log-in, and transportation process. Sample cards shall be fixed to their corresponding sample or container and transported to the appropriate laboratory for analysis.

Reinforcing steel samples shall be cut to 30" in length (no shorter or longer lengths). Obtain samples of standard bars utilized in NCDOT products (multiple bar sizes may need to be sampled). Sample cards shall be fixed to their corresponding sample and transported to the appropriate laboratory for analysis.

Samples shall be entered utilizing the HiCAMS system - see Annual Facility Audit & SOP Field Manual for entry examples.

Documentation Submittal:

- Complete the “2015 Precast Concrete Annual Facility Audit Checklist” (located on the S-drive), and send to Shannon Burns. This documentation can be submitted via electronically, faxed, or hard copy sent by mail.
- Complete the “2015 Precast Concrete Ownership Update” form (located on the S-drive), and send to Shannon Burns. This documentation can be submitted via electronically, faxed, or hard copy sent by mail. (“S”-Field Section-FORMS-Precast-Annual Facility Audit)